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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,512	07/07/2003	Yung-Ho Chuang	KLAC0075	9347

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EXAMINER

FINEMAN, LEE A

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/615,512	Applicant(s) CHUANG ET AL.	
	Examiner Lee Fineman	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-9, 69, 70 and 75-85 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 69, 70 and 75-85 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-9, 69 and 70, in the reply filed on 1 February 2005 is acknowledged. Applicant also added claims 75-85 and cancelled claims 4, 10-68 and 71-74. Claims 1-3, 5-9, 69, 70 and 75-85 are pending.

Applicant traversed the additional species restriction requirement made by the examiner. The species restriction requirement is hereby withdrawn by the examiner.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claims 3 and 69 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Independent claim 1, from which claims 3 and 69 depend, includes the limitation "having a wavelength in the range of approximately 285 to 320 nanometers." Claims 3 and 69 have wavelength ranges that are greater than this range (266-320 nm for claim 3; 266-600 nm for claim 69), which does not further limit the subject matter of the previous claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 75, 77-81, and 83-84 are rejected under 35 U.S.C. 102(b) as being anticipated by Chuang et al., U.S. Patent No. 6,064,517.

Regarding claims 75 and 83, Chuang et al. disclose in figs. 13 and 17 a system for inspecting a specimen (704) comprising an illumination system (1301) able to provide light energy having a wavelength within a predetermined range; and an imaging subsystem oriented and configured to receive said light energy from said illumination system and direct light energy toward said specimen (fig. 13), said imaging subsystem (fig. 17) comprising a plurality of lenses (1708-1716) and having a field size (column 19, line 55), wherein a ratio of lens diameter to field size is less than 100 to 1 (as the drawing are to scale, see column 12, lines 28-31, the diameter of the largest lens (1712) is approximately 50 mm and the field size is 4 mm, see column 19, line 55, therefore the ratio is 12.5 which is less than 100).

Regarding claims 77 and 84, Chuang et al. further disclose wherein said imaging subsystem further comprises a Mangin mirror arrangement (1705).

Regarding claim 78, Chuang et al. further disclose further comprising collection optics (1701) for collecting light energy reflected from said specimen (704), wherein the collection optics are catadioptric (fig. 17).

Regarding claim 79, Chuang et al. further disclose where the imaging and illumination subsystems support at least one of a group of inspection modes comprising bright field, ring dark field, directional dark field, full sky, aerial imaging, confocal, and fluorescence (abstract).

Regarding claim 80, Chuang et al. further disclose where the imaging subsystem uses a varifocal system for the full magnification range (fig. 22 and column 23, lines 18-19).

Regarding claim 81, Chuang et al. further disclose where separate imaging lenses are used for specific magnification increments (fig. 22 and column 23, lines 20-21).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 76 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang et al.

Chuang et al. disclose the claimed invention except for explicitly stating the illumination system's wavelength is in the range of approximately 285 to 320 nanometers. However, Chuang et al. does disclose in column 11, lines 36-43, that the objective may be used for light beams having different wavelengths from the infrared to the deep ultraviolet. It would have been obvious to one of ordinary skill in the art at the time the invention was made the wavelength of the illumination system any wavelength from the infrared to the deep ultraviolet, which includes the claimed range, to be able to examine different specimen characteristics under different light conditions.

8. Claims 1-3, 5-9, 69, 70, 82 and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang et al. in view of Shafer et al., U.S. Patent No. 5,717,518

Regarding claims 1-3, 5-8, 69 and 70, Chuang further discloses that catadioptric optics support wavelengths from approximately 266-600 nm (column 11, lines 36-43). Chuang et al. disclose the claimed invention except for explicitly stating the illumination system comprises an arc lamp having a wavelength in the range of approximately 285 to 320 nanometers and wherein the arc lamp has the ability to operate at wavelengths from approximately 266-600 nm. However, Chuang et al. does disclose in column 11, lines 36-43, that the objective may be used for light beams having different wavelengths from the infrared to the deep ultraviolet. Further, Shafer et al. teaches in column 4, lines 1-24, that lasers and arc lamps are art-recognized equivalents. It would have been obvious to one of ordinary skill in the art at the time the invention was made the wavelength of the illumination system any wavelength from the infrared to the deep ultraviolet, which includes the claimed range, to be able to examine different specimen characteristics under different light conditions. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the illumination system of Chuang with an arc lamp as suggested by Shafer et al., because it is a reliable, commonly available light source.

Regarding claims 9, 82 and 85, Chuang et al. further disclose using the system for detection of particular object faults (column 3, lines 44-45) but does not explicitly state the system further comprising a data analysis subsystem for analyzing data representing the light energy reflected from the specimen, wherein the data analysis subsystem has the ability to record

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defect position for any defect on the specimen. Shafer et al. teach an imaging system (fig. 6) which includes a data analysis subsystem (92 and 96) for analyzing data representing the light energy reflected from the specimen (column 9, lines 20-26), wherein the data analysis subsystem has the ability to record defect position for any defect on the specimen (into 98). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the data analysis subsystem of Shafer et al. to the system of Chuang et al. to be able to analyze and store the images that are detected (Shafer, column 9, lines 20-26).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Photonics Design & Applications Handbook (Book 3), 1999, Laurin Publishing Co. Inc., 45th Edition, Pages H-259 to H-263 discloses the spectral distribution of arc lamps (see fig. 3).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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April 28, 2005


MARK A. ROBINSON
PRIMARY EXAMINER